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(54) Title: CATHEPSIN CYSTEINE PROTEASE INHIBITORS

(57) Abstract: The present invention relates to a novel class of compounds mainly, substituted leucinamide-carboxylate derivatives of formula (I) wherein X is O or NR⁹, Y is CR¹R², -SO², C=O or NR⁹; Z is CR¹R², O, S, -SO₂ or NR⁹ and each G is independently a CR¹CR² and pharmaceutical compositions thereof. Said compounds are cathepsin cysteine protease inhibitors, including but not limited to, inhibitors of cathepsin K, L, S and B. These compounds are useful for treating and preventing cathepsin dependent conditions in which inhibition of bone resorption is indicated, such as osteoporosis.

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